

CLIMATE AND CROP SERVICE.

By JAMES BERRY, Chief of Climate and Crop Service Division.

The following extracts relating to the general weather conditions in the several States and Territories are taken from the monthly reports of the respective sections of the Climate and Crop Service. The name of the section director is given after each summary.

Precipitation is expressed in inches and temperature in degrees Fahrenheit.

Alabama.—The mean temperature was 43.0°, or 3.4° below normal; the highest was 74°, at Gadsden on the 17th and at Citronelle and Healing Springs on the 18th, and the lowest, 11°, at Oneonta on the 24th. The average precipitation was 4.13, or 0.96 below normal; the greatest monthly amount, 7.70, occurred at Elba, and the least, 1.36, at Daphne.

Heavy snow on the 22-23d, ranging from 9 inches in central counties to light in northern and southern portions, doing considerable damage to fruit trees and shrubbery in causing breakage of limbs, but affording a protective covering for wheat and oats against the cold weather which immediately followed.—*F. P. Chaffee.*

Arizona.—The mean temperature was 50.3°, or 0.2° above normal; the highest was 92°, at Mohawk Summit on the 27th and 28th, and the lowest, zero, at Flagstaff on the 14th. The average precipitation was 2.35, or 0.85 above normal; the greatest monthly amount, 8.36, occurred at Flagstaff, and the least, 0.16, at Vail.

Excessive rainfall occurred at Yuma on the 10th, 2.52 inches falling in twenty-two hours and fifteen minutes. Citrus and deciduous fruits are in a forward stage of development.—*W. G. Burns.*

Arkansas.—The mean temperature was 40.8°, or 2.2° below normal; the highest was 79°, at Texarkana on the 18th, and the lowest, 10°, at Pond on the 23d and 24th. The average precipitation was 2.18, or 0.91 below normal; the greatest monthly amount, 4.45, occurred at Camden, and the least, 0.74, at Mossville.

The weather for the past month has been favorable for early farm work, and some spring plowing has been done. Potatoes have been planted, and oats and other grains sown. Wheat is generally in good condition, but in some localities has been slightly damaged by freezing.—*E. B. Richards.*

California.—The mean temperature was 47.7°, or 0.8° above normal; the highest was 98°, at Palm Springs on the 27th, and the lowest 26° below zero, at Bodie on the 10th. The average precipitation was 6.03, or 2.73 above normal; the greatest monthly amount, 22.45, occurred at Cisco, and the least, 0.25, at Keeler.

The abnormally low temperature, with severe frosts, during the first half of the month caused but little injury and checked too rapid development of fruit buds. Heavy rains and warmer weather toward the close benefited grain and pastures. Much of the heavy snow in the mountains melted during this period, causing high water in some sections, but crops were not seriously damaged.—*G. H. Wilson.*

Colorado.—The mean temperature was 27.0°, or about normal; the highest was 79°, at Blaine on the 14th, and the lowest, 31° below zero, at Wagon Wheel Gap on the 3d. The average precipitation was 0.63, or 0.39 below normal; the greatest monthly amount, 4.06, occurred at Ruby, and the least, trace, at Saguache and Vilas.—*F. H. Brandenburg.*

Florida.—The mean temperature was 55.8°, or 3.6° below normal; the highest was 88°, at Miami on the 9th, and the lowest, 20°, at De Funiak Springs on the 24th. The average precipitation was 4.44, or 0.76 above normal; the greatest monthly amount, 11.32, occurred at Stephenville, and the least, trace, at Miami.

Fruits and vegetables made a steady advance during the month, although the cold wave of the 24th and 25th did considerable damage to tender vegetables, strawberries, and unprotected fruit trees, where the bloom was well advanced. Aside from the advantage gained by extensive protective measures, the weather following the cold wave was almost ideal and all crops made rapid progress. At the close of the month general agricultural operations were being pushed. Considerable corn was planted during the last decade of the month; in some instances the germination has been very satisfactory and the crop is looking well. Cane has advanced. Land for cotton has been prepared and planting will begin within a few days in portions of central counties.—*A. J. Mitchell.*

Georgia.—The mean temperature was 44.1°, or 4.3° below normal; the highest was 76°, at Fleming, Jesup, and Valona on the 18th, and the lowest, 9°, at Allentown on the 24th and at Dahlonga on the 25th; the average precipitation was 4.30, or 0.67 below normal; the greatest monthly amount, 8.52, occurred at Fort Gaines, and the least, 2.44, at Waynesboro.

The weather was favorable to agricultural interests, except that excessive rains delayed preparatory work in southern and western counties. Farmers are in advance of the season generally, and are labor-

ing under advantageous circumstances. Fruit trees were not injured by cold weather.—*J. B. Marbury.*

Idaho.—The mean temperature was 27.9°, or 0.1° below normal; the highest was 69°, at American Falls on the 27th, and the lowest, 28° below zero, at Lake on the 13th. The average precipitation was 1.81, or 0.29 above normal; the greatest monthly amount, 4.84, occurred at Murray, and the least, 0.34, at Lost River.

A severe storm occurred on the 16th, which extended to all parts of the State and caused heavy snow, rain, and gales. On the eastward side of Cœur D'Alene and Bitter Root ranges there was heavy snow, and on the westward side chinook winds preceding heavy rain; no damage was reported.—*S. M. Blandford.*

Illinois.—The mean temperature was 22.5°, or 4.9° below normal; the highest was 70°, at St. John on the 3d, and the lowest, 20° below zero, at Lanark, Martinton, and Yorkville on the 6th. The average precipitation was 1.62, or 0.74 below normal; the greatest monthly amount, 2.95, occurred at Palestine, and the least, 0.54, at Dixon.

Cold weather and absence of snow covering caused some damage to wheat in the central and southern district. Quite deep snow prevailed throughout the month in the northern district.—*M. E. Blystone.*

Indiana.—The mean temperature was 23.4°, or 5.0° below normal; the highest was 68°, at Mount Vernon on the 18th, and the lowest, 13° below zero, at Auburn on the 7th. The average precipitation was 1.64, or 1.16 below normal; the greatest monthly amount, 2.98, occurred at Vevay, and the least, 0.41, at Topeka.

Cold weather prevailed. In the north portion snow covered wheat, and it is possibly in good condition, but in the south portion wheat was not covered by snow at any time and was injured by freezing and the fly; many fields look brown; rye, clover, and grasses are in fair condition; some corn fields are ready for seedling.—*C. F. R. Wappenhans.*

Iowa.—The mean temperature was 17.5°, or 4.0° above normal; the highest was 49°, at Bedford on the 17th, and the lowest, 21° below zero, at Iowa City on the 10th. The average precipitation was 1.01, or about normal; the greatest monthly amount, 3.00, occurred at Ruthven, and the least, 0.12, at Murray.

February was an ideal winter month for care of stock and for farm operations usually carried on in midwinter, with no severe storms or marked extremes of temperature. No damage reported to grasses, fruit trees, vines, or winter wheat and rye.—*John B. Sage.*

Kansas.—The mean temperature was 28.0°, or 2.2° below normal; the highest was 78°, at Ulysses on the 28th, and the lowest, 16° below zero, at Achilles on the 9th. The average precipitation was 1.25, or 0.14 above normal; the greatest monthly amount, 2.55, occurred at Marion, and the least, 0.22, at Englewood.

The weather has been quite favorable for wheat growing and seed in the ground, the latter beginning to germinate the last week. Plowing continued in many southern and some western counties. Oat sowing began in Montgomery County the last days. At close of month fruit buds were good, and in Sumner and Wilson counties pastures were green.—*T. B. Jennings.*

Kentucky.—The mean temperature was 32.4°, or 2.7° below normal; the highest was 71°, at Paducah on the 17th, and the lowest, 1°, at Catlettsburg on the 24th. The average precipitation was 1.27, or 2.35 below normal; the greatest monthly amount, 2.48, occurred at Blandville, and the least, 0.40, at Centertown and Manchester.

During February wheat was without snow protection, and was further damaged by alternate freezing and thawing; injury from freezing is general, and many fields have been damaged by fly. A large amount of plowing for corn has been done. Tobacco beds are being prepared. Fruit is uninjured.—*H. B. Harsey.*

Louisiana.—The mean temperature was 50.1°, or 2.5° below normal; the highest was 85°, at Lake Providence on the 18th, and the lowest, 10°, at Plain Dealing on the 23d. The average precipitation was 5.39, or 0.41 above normal; the greatest monthly amount, 9.05, occurred at White Sulphur Springs, and the least, 2.45, at Plain Dealing.

The cold wave of February 22-25, following a period of warm, sunny weather, which had started the sap in fruit trees and advanced some plants further than is usual at this season of the year, injured the peaches in places, killed some strawberries and early vegetables and retarded the development of the early strawberry crop one to two weeks. Otherwise the weather during the month was favorable to agricultural interests, and farm work was well advanced at the close of the month.—*W. T. Blythe.*

Maryland and Delaware.—The mean temperature was 27.5°, or 4.4° below normal; the highest was 69°, at Sharpsburg, Md., on the 16th, and the lowest, 6° below zero, at Deerpark, Md., on the 23d. The average precipitation was 0.77, or 3.06, below normal; the greatest monthly amount, 2.39, occurred at Sunnyside, Md., and the least, 0.10, at Chase, Md., and Charlotte Hall, Md.

The month was dry and windy. The deficiency in precipitation is

being severely felt in some districts, and many wells and springs have failed. The deficiency in temperature was due to prolonged but not severe cold spells. In the northern counties ample snow covering protected wheat until about the middle of February, but farther south the entire month was unfavorable to winter grain and grasses. The condition of wheat was less favorable at the close of February than at the close of the month preceding, but least damage had been caused in the more important wheat producing counties.—*Oliver L. Fassig.*

Michigan.—The mean temperature was 14.2°, or 5.7° below normal; the highest was 44°, at Houghton and Baraga on the 23th, and the lowest, 26° below zero, at Humboldt on the 3d. The average precipitation was 1.39, or 0.57 below normal; the greatest monthly amount, 4.60, occurred at Berrien Springs, while none fell at Thomaston.—*C. F. Schneider.*

Minnesota.—The mean temperature was 10.0°, or 1.5° below normal; the highest was 56°, at Beardsley on the 13th, and the lowest, 38° below zero, at Pokegama on the 6th. The average precipitation was 0.40, or about 0.25 below normal; the greatest monthly amount, 1.00, occurred at Leroy, and the least, 0.02, at New London.

The average temperature for the whole State was about 1.5° below the normal, though in western Minnesota the average was above the normal. There were moderately high temperatures from the 13th to the 18th. The lowest temperatures occurred on the 5th, 6th, and 22d. In northern portions the temperatures were considerably below zero every night except from the 13th to the 18th, but in southern portions zero was not reached on many nights. The deficiency in the monthly average temperature seems to have been due more to an absence of high temperatures than to any very low temperatures. Since the 1st of January there has been no general thaw, a fact that has contributed to the making of ice of unusual thickness and of the best quality. The precipitation of the State was deficient about 0.25 of an inch. It is probable that all the precipitation was snow; this fell for the most part on the 7th and 8th and on the 17th. The snow was sufficient in the timber regions for work, which, with the steady cold weather, has made the season a very favorable one for the lumbermen. Snow has covered the State all the month, but in the prairie regions it was light and generally insufficient for good sleighing.—*T. S. Outram.*

Mississippi.—The mean temperature was 45.7°, or 3.1° below normal; the highest was 80°, at Natchez on the 18th, and the lowest, 14°, at Saratoga on the 24th. The average precipitation was 4.37, or 0.43 below normal; the greatest monthly amount, 8.24, occurred at Water Valley, and the least, 1.65, at Hernando.

The snowfall of the 22d and 23d amounted to over 7 inches in the central and east central counties.—*W. S. Belden.*

Missouri.—The mean temperature was 27.9°, or 2.7° below normal; the highest was 76°, at Appleton City on the 17th, and the lowest, 19° below zero, at Bethany on the 10th. The average precipitation was 1.63, or 0.66 below normal; the greatest monthly amount, 5.04, occurred at Sikeston, and the least, 0.50, at Windsor.

In most of the northern counties winter wheat was well protected by snow during the greater part of the month, but in the central and southern sections the fields were generally bare and some damage resulted from alternate freezing and thawing. In general, however, the crop continued in good condition.—*A. E. Hackett.*

Montana.—The mean temperature was 19.5°, or 1.4° below normal; the highest was 68°, at Miles City on the 28th, and the lowest, 26° below zero, at Poplar on the 4th and at Wibaux on the 4th and 5th. The average precipitation was 0.61, or 0.06 below normal; the greatest monthly amount, 2.44, occurred at Clemons, and the least, trace, at Chester.—*E. J. Glass.*

Nebraska.—The mean temperature was 21.4°, or 2.7° below normal; the highest was 70°, at Madrid on the 16th and at Arborville on the 28th, and the lowest, 29° below zero, at Gering on the 9th. The average precipitation was 0.83, or 0.14 above normal; the greatest monthly amount, 1.68, occurred at Minden, and the least, 0.25, at Bartley and Norfolk.

A favorable month for winter wheat.—*G. A. Loveland.*

Nevada.—The mean temperature was 31.9°, or 0.9° above normal; the highest was 77°, at Candelaria on the 28th, and the lowest, 27° below zero, at Elko on the 11th. The average precipitation was 2.61, or 1.79 above normal; the greatest monthly amount, 7.93, occurred at Levers Ranch, and the least, 0.35, at Potts.

The outlook is very bright for plenty of water this year.—*J. H. Smith.*

New England.—The mean temperature was 18.0°, or 5.1° below normal; the highest was 49°, at New Bedford, Mass., on the 17th, and the lowest, 23° below zero, at Grafton, N. H., on the 2d. The average precipitation was 0.96, or 2.48 below normal; the greatest monthly amount, 3.65, occurred at Enosburg Falls, Vt., and the least, 0.18, at Northfield, Vt.

The weather of the month was unusually pleasant, with a superabundance of sunshine. Precipitation occurred on an average of but 4 days, and the average number of clear days for the entire section was 15. Notable features of the weather of the month were the absence of rainfall and the continuous northwest winds through the month in all sections of the district. There were no destructive storms.—*J. W. Smith.*

New Jersey.—The mean temperature was 25.4°, or 6.0° below normal; the highest was 52°, at Bridgeton and Salem on the 16th, and the lowest, 6° below zero, at Riverdale on the 1st and at Layton on the 11th; the average precipitation was 0.94, or 3.11 below normal; the greatest monthly amount, 1.65, occurred at Toms River, and the least, 0.69, at Newark.

The average precipitation for the month is the least recorded since the establishment of this service, and is the lowest recorded at New Brunswick during February for the past 36 consecutive years. Wells, springs, and streams were never known to be so low. Farmers are hauling water for domestic and stock purposes. Wheat and rye are not in good condition, owing to frequent freezing and thawing during December and January.—*E. W. McGann.*

New Mexico.—The mean temperature was 38.2° or 1.1° above normal; the highest was 81°, at Mesilla Park on the 21st, and the lowest, 6° below zero, at Winsors on the 8th. The average precipitation was 0.93, or 0.42 above normal; the greatest monthly amount, 2.25, occurred at Winsors, and the least, 0.22, at Espanola.

Unusually warm and pleasant weather, with more than the average precipitation. Soil in excellent condition and some early plowing done.—*R. M. Hardinge.*

New York.—The mean temperature was 16.1°, or 6.8° below normal; the highest was 46°, at Wappingers Falls on the 16th, Carvers Falls on the 19th, and at Catskill and Primrose on the 26th, and the lowest, 29° below zero, at Axton on the 8th. The average was 1.44, or 1.11 below normal; the greatest monthly amount, 5.08, occurred at North Lake, and the least, 0.05, at Catskill.

The month was unusually cold, with high westerly winds and light precipitation. Wheat and rye were protected by snow during the entire month, and were in good condition at its close.—*R. G. Allen.*

North Carolina.—The mean temperature was 8.1°, or 5.2° below normal; the highest was 77°, at Newbern on the 18th, and the lowest, 3°, at Flat Rock and Linville on the 3d. The average precipitation was 1.93, or 2.41 below normal; the greatest monthly amount, 4.39, occurred at Sloan, and the least, 0.86, at Louisburg.

The month was rather unfavorable for winter wheat, which was considerably injured by alternate freezing and thawing. The drought also prevented spreading, and the condition of the crop was backward at the end of February. Much of the damage is attributed to ravages by hessian fly earlier in the season, and not enough appears to be winter killed to prevent good stands when growth starts. The snow storm on February 23 gave a depth of 9 inches unmelted snow over the southeast section from Washington, N. C., to Wilmington, but almost none in the west.—*C. F. von Herrmann.*

North Dakota.—The mean temperature was 7.1°, or 0.5° above normal; the highest was 60°, at Berthold Agency on the 13th, and the lowest, 31° below zero, at Portal on the 4th. The average precipitation was 0.31, or 0.17 below normal; the greatest monthly amount, 0.88, occurred at Fort Yates, and the least, trace, at Melville and Willow City.—*B. H. Bronson.*

Ohio.—The mean temperature was 21.1°, or 7.2° below normal; the highest was 60°, at Sinking Springs on the 17th, and the lowest, 20° below zero, at Orangeville on the 23d. The average precipitation was 1.24, or 1.57 below normal; the greatest monthly amount, 2.90, occurred at Pulse, and the least, 0.45, at Moorefield.

The average temperature was lower than in any previous February on record, with but two exceptions—1885 and 1895. The precipitation was very light, there being only one year, 1895, when it was more deficient.—*J. Warren Smith.*

Oklahoma and Indian Territories.—The mean temperature was 37.6°, or 0.1° above normal; the highest was 82°, at Colbert on the 28th, and the lowest, 1° below zero, at Kenton on the 23d. The average precipitation was 0.94, or 0.23 below normal; the greatest monthly amount, 2.05, occurred at Tahlequah, and the least, trace, at Woodward.

Normal temperature and slightly deficient rainfall characterized the month. Snow occurred on the 6th, 10th, 22d, and other dates, the average for the section being 2 inches. While the ground is very dry, there appears to be sufficient moisture in the subsoil for the present and immediate future. A good rain, however, would be of great benefit. Wheat is still in good condition, and cattle are healthy and in good flesh; farm work was well advanced.—*Charles M. Strong.*

Oregon.—The mean temperature was 39.9°, or 0.6° above normal; the highest was 76°, at Monmouth on the 28th, and the lowest, 8° below zero, at Prineville on the 4th and at Riverside on the 8th. The average precipitation was 5.78, or 0.63 above normal; the greatest monthly amount, 15.81, occurred at Nehalem, and the least, 0.80, at Joseph.

The weather has been favorable for the growth of vegetation of all kinds, especially grasses and small grains.—*A. B. Wollaber.*

Pennsylvania.—The mean temperature was 21.7°, or 6.9° below normal; the highest was 57°, at Greensboro on the 18th, and the lowest, 22° below zero, at Saegerstown on the 23d. The average precipitation was 0.96, or 2.36 below normal; the greatest monthly amount, 2.75, occurred at Cassandra, and the least, 0.27, at Chambersburg.

Weather conditions have been excellent for grain. February opened with a blanket of snow covering the entire State. On the level the depth varied from a few inches in the southeastern quarter to over 2

feet at some points in the north west. High winds caused heavy drifts at many places, though traffic was interfered with but little. Wheat and rye remained well covered and protected during the greater part of the month, as snow melted but slowly under the influence of continued cold weather. Only patches here and there in exposed fields became bare early in the month from the effects of high winds, principally upon hillsides. Grain is reported poorer in the east and south-east sections than elsewhere. In those sections fields were bare during a considerable part of the winter, and damage from the hessian fly was also reported. At the close of February the condition of wheat and rye over the greater portion of the State was apparently fully up to the average.—*L. M. Day.*

Porto Rico.—The mean temperature was 74.9°, or 1.9° above normal; the highest was 96°, at Bayamon on the 23d, and the lowest, 52°, at Cayey on the 8th, 13th and 14th, Cidra on the 13th, and Juana Diaz on the 1st. The average precipitation was 1.39, or 0.96 below normal; the greatest monthly amount, 5.70, occurred at Coamo, and the least, 0.09, at Caguas.

The grinding of sugar cane continues and the weather has been very favorable. Cane is maturing nicely, but the grade of the juice is slightly below the average and not as good as was anticipated. Some new cane is being planted, but the ground is rather dry for this work; the crop is needing rain to insure a good stand, otherwise it is doing well. Tobacco cutting is progressing favorably; the crop is small, but the quality is good. Coffee trees are flowering exceptionally well and a good crop is promised, but some plantations are in need of cultivation. Pastures and small crops are needing rain, especially over the western portion of the island, where the drought continues. Small crops have not done as well as they did during the month of January; marketing continues, but the supply is not as plentiful as last month.—*Joseph L. Cline.*

South Carolina.—The mean temperature was 43.2°, or 3.1° below normal; the highest was 78°, at Gillisonville on the 18th, and the lowest, 7°, at Temperance on the 23d. The average precipitation was 3.08, or 1.32 below normal; the greatest monthly amount, 5.40, occurred at Georgetown, and the least, 1.28, at Winnsboro.

Snow occurred on the 23d over the entire State; the snowfall was light over the western, and heavy over the southeastern and eastern portions, followed on the 24th and 25th by ground freeze. Preparation of lands for spring planting well advanced.—*J. W. Bauer.*

South Dakota.—The mean temperature was 16.4°, or 1.0° above normal; the highest was 71°, at Rosebud on the 28th, and the lowest, 25° below zero, at Pine Ridge on the 9th. The average precipitation was 0.35, or 0.15 below normal; the greatest monthly amount, 1.40 occurred at Oelrichs, and the least, trace, at Bowdle, Canton, and Ipswich.—*S. W. Glenn.*

Tennessee.—The mean temperature was 36.7°, or 3.3° below normal; the highest was 75°, at Springdale on the 18th, and the lowest, 5°, at Silverlake on the 25th. The average precipitation was 1.87, or 2.69 below normal; the greatest monthly amount, 3.10, occurred at Iron City, and the least, 0.79, at Knoxville.

The month was rather unfavorable for winter grain crops. Alternate freezing and thawing had bad effect on wheat, which made little or no progress. The very light snowfall did not give sufficient protection, and the prospect at the close of the month was anything but flattering. In a few counties winter wheat was reported in fair condition, but generally it was much below the average for this period. The seeding of oats, plowing and preparation for planting corn, also other farm work, progressed favorably during the month.—*H. C. Bate.*

Texas.—The mean temperature was 48.1°, or 3.5° below normal; the highest was 92°, at Fort Ringgold on the 28th, and the lowest, zero, at Mount Blanco on the 12th. The average precipitation was 1.78, or about normal; the greatest monthly amount, 6.06, occurred at Trinity, while none fell at Fort Brown and Sanderson.

Wheat was suffering for rain at the opening of the month, but showers, with 3 to 4 inches of snow in many localities, proved exceptionally favorable to this crop. Good growth has been made and the crop is promising except in a few scattered localities where the precipitation has not yet been sufficient for the needs of the plant. Prepara-

tions for corn planting have been pushed forward with rapidity under auspicious conditions. Planting is well under way over the southern portion of the State, and will be commenced over the central portion soon. The preparation of land for the next cotton crop is receiving attention, and for the season of the year is well advanced. The weather has been exceptionally favorable for plowing. Oat seeding was completed during the month. The crop is generally up to good stands, and is in a promising condition.

Utah.—The mean temperature was 31.0°, or 1.9° above normal; the highest was 75°, at St. George on the 28th, and the lowest, 26° below zero, at Lund on the 13th. The average precipitation was 1.90, or 0.74 above normal; the greatest monthly amount, 4.80, occurred at Tropic, and the least, 0.33, at Giles.—*L. H. Murdoch.*

Virginia.—The mean temperature was 31.9°, or 5.3° below normal; the highest was 69°, at Buckingham, Bigstone Gap, and Fontella on the 18th, and the lowest, 1°, at Hot Springs on the 1st. The average precipitation was 0.75, or 3.08 below normal, the greatest monthly amount, 2.51, occurred at Callaville, and the least, trace, at Stanardsville.

No severe storms occurred, but the cold, dry weather obtaining was injurious to winter wheat, oats, and clover. The late sown winter wheat especially was much damaged, the root growth being not sufficient to enable it to withstand the bad effects of freezing and thawing.—*Edward A. Evans.*

Washington.—The mean temperature was 35.9°, or about normal; the highest was 71°, at Moxee on the 28th, and the lowest, 9° below zero, at Northport on the 5th. The average precipitation was 4.51, or 0.20 above normal; the greatest monthly amount, 16.09, occurred at Monte Cristo, and the least, 0.94, at Port Townsend.

The fore part of the month was unfavorable to winter wheat, on account of heavy frosts, in the absence of snow. The damage was only slight, however. The latter part of the month was mild and wet, and generally favorable for crops.—*G. N. Salisbury.*

West Virginia.—The mean temperature was 27.1°, or 3.6° below normal; the highest was 62°, at Magnolia on the 16th and at Green Sulphur Springs on the 18th, and the lowest, 6° below zero, at Lewisburg on the 1st. The average precipitation was 0.86, or 2.52 below normal; the greatest monthly amount, 1.66, occurred at Spencer, and the least, 0.10, at Magnolia.

Dry, cold weather, with high winds and practically no snow protection was unfavorable for late sown wheat; early sown looks fairly well, having made good growth during fall and early winter, and is well rooted with good top; feed scarce, but stock wintering fairly well where protected; practically no farm work done, although farmers are getting ready for spring work.—*E. C. Voss.*

Wisconsin.—The mean temperature was 12.0°, or 5.0° below normal; the highest was 42°, at Pepin on the 28th, and the lowest, 26° below zero, at Hayward on the 6th. The average precipitation was 0.81, or 0.45 below normal; the greatest monthly amount, 1.92, occurred at Milwaukee, and the least, 0.25, occurred at Menasha and Spooner.

The month was favorable to winter crops, the abundant snowfall affording ample protection throughout the month.—*W. M. Wilson.*

Wyoming.—The mean temperature was 20.1°, or 1.4° above normal; the highest was 68°, at Fort Washakie and Cody on the 28th, and the lowest, 32° below zero, at Bigpiny on the 13th. The average precipitation was 0.80, or 0.03 above normal; the greatest monthly amount, 2.26, occurred at Centennial, and the least, 0.01, at Fort Washakie.—*W. S. Palmer.*

Cuba.—The mean temperature was 72.4°; the highest was 94°, at San Cayetano, and the lowest, 45°, at Rosario (Aguacate). The average precipitation was 1.39; the greatest monthly amount, 3.07, occurred at Cienfuegos, and the least, trace, at San Cayetano and Soledad (Guan-támo).

The weather was dry and rather cool over Pinar del Rio, Havana, Matanzas, and northwest Santa Clara; seasonal showers and temperature prevailed over remainder of island. Tobacco in Vuelta Abajo suffered severely, yield very short, crop in fair condition elsewhere. Cane grinding, preparation of ground for spring planting, and the cultivation of new canes progressed actively.—*Montrose W. Hayes.*

SPECIAL CONTRIBUTIONS.

ICE CAVES AT FLAGSTAFF, ARIZ.

By Mrs. ELIZABETH RENOE, dated Flagstaff, March 6, 1901.

The ice caves 9 miles southeast of Flagstaff are situated at the base of the mountains, and are thought to be of volcanic origin.

The opening is basin shaped, and only large enough to admit a man entering feet foremost, and dropping from ledge to ledge. In some places the drop is about 8 feet, and the

ledge about 4 feet wide. The total depth is about 20 feet. The first chamber is only about 2½ feet high, but gets higher as one proceeds. It extends about 100 yards, where one may stand upright. It is thought that the snow melting on the mountains runs in and becomes frozen with the cold air. At this time of the year it is filled with ice to the entrance, but about July and August only one chamber, the farthest from the entrance, is frozen.

Cart loads of ice were hauled thence the past summer,